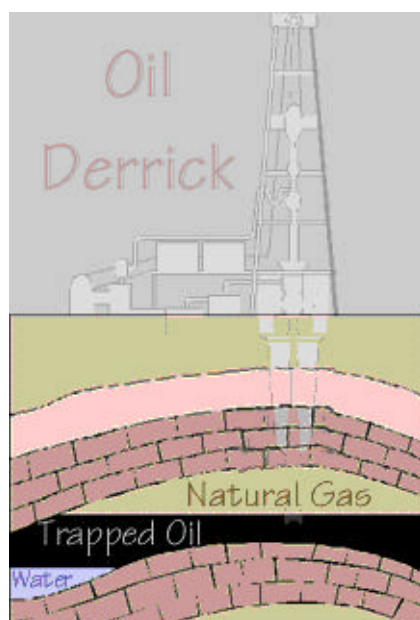


Fossil Fuel Formation

Matter
Energy
Forces
Machines
Earth

Petroleum, natural gas, and coal are the main sources of energy for modern use. All of these fuels are classified as **fossil fuels**. The reason they are called fossil fuels is because they are all made from decayed plants and animals that have been preserved in the earth's crust by pressure, bacterial processes and heat. It takes millions of years for these organisms to chemically change into fossil fuels.

Liquid fossil fuels, like **petroleum**, is formed in areas that geologists believe were once covered by oceans or seas. These fuels were formed when dead plants and animals sank to the bottom of the ocean and were covered by sediments. Over long periods of time (millions of years), pressure, bacterial processes, and heat changed the sediments into sedimentary rocks and the plant and animal remains into oil. Eventually underground pools of oil formed when oil migrated through the pores and cracks of rocks and eventually filled these empty spaces. Geologists search in areas which may contain oil traps. Oil traps include fault lines where porous rock is aligned next to non-porous rock. These traps are also found among folded rock layers.



This is an example of a folded-rock-layer oil trap being drilled for petroleum. Oil drills are known as a oil derricks in the petroleum industry.

Another type of fossil fuel is **natural gas**. It is found sometimes with petroleum, with coal, or by itself. Since it is less dense, it is most often found on top of oil pools. Natural gas is valuable because it burns cleanly, releases energy, and can be easily transported in underground pipelines. We use natural gas in many ways including heating our homes and cooking our food.



The [Utah Mining Association](#) gives the following explanation for the development of coal.

"Coal is a very complex and diverse energy resource that can vary greatly, even within the same deposit. In general, there are four basic varieties of coal, which are the result of geologic forces having altered plant material in different ways. These varieties descended from the first stage in the formation of coal: the creation of peat or partially decomposed plant material.

Peat: Increased pressures and heat from overlying strata caused buried peat to dry and harden into lignite. Lignite is a brownish-black coal with

generally high moisture and ash content and lower heating value. However, it is an important form of energy for generating electricity, particularly in the American Southwest.

Subbituminous: Under still more pressure, some lignite was changed into the next rank of coal: subbituminous. This is Coal is a combustible mineral formed from the remains of trees, ferns and other plants that existed and died during the time of the dinosaurs. A dull black coal with a higher heating value than lignite that is used primarily for generating electricity and for space heating.

Bituminous: Even greater pressure resulted in the creation of bituminous, or "soft" coal. This is the type most commonly used for electric power generation in the U.S. It has a higher heating value than either lignite or subbituminous, but less than that of anthracite.

Anthracite: Sometimes also called "hard coal," anthracite was formed from bituminous coal when great pressures developed in folded rock strata during the creation of mountain ranges. Anthracite has the highest energy content of all coals and is used for space heating and generating electricity. grade coal, containing no unconverted plant remains. It burns cleaner than lignite. Anthracite is metamorphic coal and is the highest grade of coal. It burns the cleanest and produces the most heat. "



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